

DR P-PSDB: AAW30792.
XX Nucleic acid encoding gibberellin inhibitor GAI and related
PT antisense sequences - used to create tall, or particularly, dwarf
PT plants, especially crops such as maize, rice and wheat
XX
PS Claim 2; Fig 3; 76pp; English.
XX
CC The present sequence encodes the Arabidopsis thaliana gibberellin
CC insensitivity (gai) gene product (GAI), the expression of which
CC inhibits plant growth. However the inhibition is antagonised by
CC gibberellin (GA), while gai expression confers a dwarf phenotype
CC that is insensitive to GA. Manipulating gai and GAI expression can
CC produce tall or dwarf plants, particularly the latter for increased
CC resistance to lodging and increased yield. It may also allow
CC regulation of flowering, i.e. plants remain in the vegetative state
CC until treated with GA, useful to inhibit bolting in spinach and
CC lettuce. GAI can be used to raise specific antibodies for
CC identifying homologous proteins or genes in other species. gai
CC fragments can also be used as probes or primers to identify and
CC clone related sequences, or in the preparation of antisense or
CC sense expression regulating (co-suppressing) sequences. Rice plants
CC that express GAI may be resistant to Bakane disease. Manipulation
CC of gai and GAI makes it possible to tailor the degree of dwarfism
CC and GA sensitivity to particular crops or situations.
XX
SQ Sequence 1964 BP; 489 A; 426 C; 474 G; 575 T; 0 other;

Query Match 100.0%; Score 1964; DB 18; Length 1964;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1964; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 taataaatcttttttttttaaaccttcctctctatttttaacattttttgttatta 60
Db 1 taataaatcttttttttttaaaccttcctctctatttttaacattttttgttatta 60

Qy 61 gaagtgttagtggagtgaaataacaaatccttaagcagtcctaacgatacccggaagctaa 120
Db 61 gaagtgttagtggagtgaaataacaaatccttaagcagtcctaacgatacccggaagctaa 120

Qy 121 agattttcacttcccaataaagcaaaacacttagatcccgacattgaagaaaaccttt 180
Db 121 agattttcacttcccaataaagcaaaacacttagatcccgacattgaagaaaaccttt 180

Qy 181 tagatccatctctgaaaaaaaccaaaccatgaagagagatcatcatcatcatcaaga 240
Db 181 tagatccatctctgaaaaaaaccaaaccatgaagagagatcatcatcatcatcaaga 240

Qy 241 taagaagactatgatgatgaatgaagaagacgagcggtaacggcagtgatgagctcttagc 300
Db 241 taagaagactatgatgatgaatgaagaagacgagcggtaacggcagtgatgagctcttagc 300

Qy 301 tgtctctgtttacaaaggttaggtcatcgaaatggctgagtgttctcagaaactcgagca 360
Db 301 tgtctctgtttacaaaggttaggtcatcgaaatggctgagtgttctcagaaactcgagca 360

Qy 361 gcttgaagttatgatgtctaatgttcaagaagacgagatctttcacaactcgtaactgagac 420
Db 361 gcttgaagttatgatgtctaatgttcaagaagacgagatctttcacaactcgtaactgagac 420

Qy 421 tgttcaactataatccggcgagctttacagtggtctgtattctatgtctcaccgaccttaa 480
Db 421 tgttcaactataatccggcgagctttacagtggtctgtattctatgtctcaccgaccttaa 480

Qy 481 tccctccgtctgcttaacgcgagtagcatcttaagagctattcccggtgacgcgattctcaa 540
Db 481 tccctccgtctgcttaacgcgagtagcatcttaagagctattcccggtgacgcgattctcaa 540

Qy 541 tcagttcgctatcgattcggtctcttctgcttaacaaaggcgaggagagatacgtatcac 600
Db 541 tcagttcgctatcgattcggtctcttctgcttaacaaaggcgaggagagatacgtatcac 600

Qy 601 tacaaacaagcgggttgaaatgtctaaacgcgctogtggaaaccaccacagcagcggtcga 660
Db 601 tacaaacaagcgggttgaaatgtctaaacgcgctogtggaaaccaccacagcagcggtcga 660

Qy 661 gtaactcggcatgtgtctcgttggtgactcgcaggaagaacggtgctcgtcttcacgc 720
Db 661 gtaactcggcatgtgtctcgttggtgactcgcaggaagaacggtgctcgtcttcacgc 720

Qy 721 gcttttgcttcgctgaagctgttccagaagagaatctgactggtgcggaagcctctggt 780
Db 721 gcttttgcttcgctgaagctgttccagaagagaatctgactggtgcggaagcctctggt 780

Qy 781 gaagcaaatcggtattcttagctgtttctcaaatcgagactatgagaaagtcgctactta 840
Db 781 gaagcaaatcggtattcttagctgtttctcaaatcgagactatgagaaagtcgctactta 840

Qy 841 cttgcggaagctctcgcgagcggtattaccgtctctctcgtcgcagagatccaatcga 900
Db 841 cttgcggaagctctcgcgagcggtattaccgtctctcgtcgcagagatccaatcga 900

Qy 901 ccaactctctccgatactcttcagatgcacttctacgagacttgccttcttctcaagt 960
Db 901 ccaactctctccgatactcttcagatgcacttctacgagacttgccttcttctcaagt 960

Qy 961 cgtcacttcacgcggaatcaagcgattctcgaagcttttcaagggaaagaaagattca 1020
Db 961 cgtcacttcacgcggaatcaagcgattctcgaagcttttcaagggaaagaaagattca 1020

Qy 1021 tgtcatgattctctctatgagtcaggctcttcaatggcggcgctctatgcaggctctgc 1080
Db 1021 tgtcatgattctctctatgagtcaggctcttcaatggcggcgctctatgcaggctctgc 1080

Qy 1081 gcttcgactggtggtcctctgtttccggttaacgggaattggtccacggcaccgga 1140
Db 1081 gcttcgactggtggtcctctgtttccggttaacgggaattggtccacggcaccgga 1140

Qy 1141 taattcgatttatcttcaatgaagttgggtgaagctggctcatttagctgaggcgattca 1200
Db 1141 taattcgatttatcttcaatgaagttgggtgaagctggctcatttagctgaggcgattca 1200

Qy 1201 cgttgagttgagtcacagagattgttgcttaacacttttagctgactgtgcttgcgat 1260
Db 1201 cgttgagttgagtcacagagattgttgcttaacacttttagctgactgtgcttgcgat 1260

Qy 1261 gcttgagcttagacaaagtgagattgaaatctgttcgggttaactctgttttcgagcttca 1320
Db 1261 gcttgagcttagacaaagtgagattgaaatctgttcgggttaactctgttttcgagcttca 1320

Qy 1321 caagctcttggaagcagcctggtgcgacgataaggttcttgggtggtggaatcagattaa 1380
Db 1321 caagctcttggaagcagcctggtgcgacgataaggttcttgggtggtggaatcagattaa 1380

Qy 1381 accggagattttcactgtgttgagcaggaatcgaaccataatagtcogatttcttaga 1440
Db 1381 accggagattttcactgtgttgagcaggaatcgaaccataatagtcogatttcttaga 1440

Qy 1441 tcggtttactgagtcggttgcaatttactcgcagctgttcttgcactcgttgggaaggttacc 1500
Db 1441 tcggtttactgagtcggttgcaatttactcgcagctgttcttgcactcgttgggaaggttacc 1500

Qy 1501 gagtgttcaagacaaggtcatgtcggaggtttacttgggttaaacagatctcgaactgtt 1560
Db 1501 gagtgttcaagacaaggtcatgtcggaggtttacttgggttaaacagatctcgaactgtt 1560

Qy 1561 ggcctgtgtaggacactaccgaggtgagcgtcatgaacgtttgagtcagtgaggaaacccg 1620
Db 1561 ggcctgtgtaggacactaccgaggtgagcgtcatgaacgtttgagtcagtgaggaaacccg 1620

Qy 1621 gttcgggtctgctgggttttgcggctgcacatttgggttcgaatcggtttaagcagcgag 1680
Db 1621 gttcgggtctgctgggttttgcggctgcacatttgggttcgaatcggtttaagcagcgag 1680

Qy 1681 tatgcttttgctctgtttcaacgcggttgaggggttatcggttgaggagagtgacggtcg 1740

| | | | | |
|--------------|---|---|---|--|
| D | b | 1681 | tatgctttggcctgtcttcaacgcgggtgaggggttatcggtcgaggagagtgcggtg | |
| Q | y | 1741 | tctcatgttggttgccacacacgaccgctcatagcacctcggcttgaaactctccac | |
| D | b | 1741 | tctcatgttggttgccacacacgaccgctcatagccacctcggcttgaaactctccac | |
| Q | y | 1801 | caattagatgtggctccaatgaatgatctgttgaacgggttatgatagatttcoga | |
| D | b | 1801 | caattagatgtggctccaatgaatgatctgttgaacgggttatgatagatttcoga | |
| Q | y | 1861 | cagaagccaaactaaatcctactgttttccccttgtcacttgttaagatcttatctttc | |
| D | b | 1861 | cagaagccaaactaaatcctactgttttccccttgtcacttgttaagatcttatctttc | |
| Q | y | 1921 | attatatgtagtaattgaaaattttctaataattcactcacctggc | |
| D | b | 1921 | attatatgtagtaattgaaaattttctaataattcactcacctggc | |
| RESULT 2 | | | | |
| A | A | AD06646 | | |
| I | D | AD06646 standard; cDNA; 1951 BP. | | |
| X | X | AC | | |
| X | X | AA06646; | | |
| D | T | 10-AUG-2001 (first entry) | | |
| X | X | | | |
| D | E | A. thaliana transcription factor G308 cDNA. | | |
| X | X | | | |
| K | W | Plant transcription factor; phenotype; sugar sensing characteristic; | | |
| K | W | transgenic plant; plant yield; growth; germination; photosynthesis; | | |
| K | W | glyoxylate metabolism; respiration; pathogen response; wounding response; | | |
| K | W | cell cycle regulation; pigmentation; flowering; senescence; physiology; | | |
| K | W | storage organ; metabolism; ss. | | |
| X | X | | | |
| O | S | Arabidopsis thaliana. | | |
| X | X | | | |
| F | H | Key | Location/Qualifiers | |
| F | T | CDS | 196..1794 | |
| F | T | /tag= | a | |
| F | T | /product= | "Transcription factor" | |
| X | X | | | |
| P | N | WO200135725-A1. | | |
| X | X | | | |
| P | D | 25-MAY-2001. | | |
| X | X | | | |
| P | F | 14-NOV-2000; 2000WO-US31414. | | |
| X | X | | | |
| P | R | 17-NOV-1999; 99US-0166228. | | |
| P | R | 17-APR-2000; 2000US-0197899. | | |
| P | R | 22-AUG-2000; 2000US-0227439. | | |
| X | X | | | |
| (| M | ENDEL BIOTECHNOLOGY INC. | | |
| (| J | IAN/JIANG C. | | |
| (| H | EAR/JHEARD J. | | |
| P | A | (PINE/PINEDA O. | | |
| P | A | (PILG/PILGRIM M. | | |
| P | A | (ADAM/ADAM L. | | |
| P | A | (RIEC/RIECHMANN J L. | | |
| P | A | (YUGG/YU G. | | |
| P | A | (SAMA/SAMAH A R. | | |
| X | X | | | |
| J | i | ang C, Heard J, Pineda O, Pilgrim M, Adam L, Riechmann JL; | | |
| P | i | Yu G, Samaha R; | | |
| X | X | | | |
| P | P | WI: 2001-335977/35. | | |
| D | R | P-PSDB; AA02545. | | |
| X | X | | | |
| P | T | Nucleic acids encoding plant transcription factor polypeptides, useful | | |
| P | T | for altering the sugar sensing characteristics of plants and increasing | | |
| P | T | yield, e.g. corn, potato and cotton plants - | | |
| X | X | | | |

Db 614 acggcgctcgtagaaacaccacagcagcagcggtgagtcgaactcggcgatgttctcgtggtg 673
Qy 687 actcgcagagaaacggtgtggtctcgttcacgcgcttttggcttgcgctgaagctgttc 746
Db 674 actcgcagagaaacggtgtggtctcgttcacgcgcttttggcttgcgctgaagctgttc 733
Qy 747 agaaggagaatctgactgtgcggaagctctggtgaagcaaatcggatcttagctgttt 806
Db 734 agaaggagaatctgactgtgcggaagctctggtgaagcaaatcggatcttagctgttt 793
Qy 807 ctcaaatcggagctatgaaagctcgtacttacttcgcggaagctctcgcgcgcgga 866
Db 794 ctcaaatcggagctatgaaagctcgtacttacttcgcggaagctctcgcgcgcgga 853
Qy 867 ttaccgtctctctcgcgcgagagtcgaatcgaacactctctctccgatactcttcaga 926
Db 854 ttaccgtctctctcgcgcgagagtcgaatcgaacactctctctccgatactcttcaga 913
Qy 927 tgcactttacgagacttgccttatctcaagtttcgctcaacttcaacgcgcgaatcaagcga 986
Db 914 tgcactttacgagacttgccttatctcaagtttcgctcaacttcaacgcgcgaatcaagcga 973
Qy 987 ttctcgaagcttttcaagggaagaaagagttcatgtcatgtattctctctatgagtcgaag 1046
Db 974 ttctcgaagcttttcaagggaagaaagagttcatgtcatgtattctctctatgagtcgaag 1033
Qy 1047 gtcttcaatgcccgcgctttagcaggctcttgcgcttcgacctggtggtctcctgttt 1106
Db 1034 gtcttcaatgcccgcgctttagcaggctcttgcgcttcgacctggtggtctcctgttt 1093
Qy 1107 tccggttaaccgcgaattggtccaccgcgcacgcggataatttcgatttatcttcataagcttg 1166
Db 1094 tccggttaaccgcgaattggtccaccgcgcacgcggataatttcgatttatcttcataagcttg 1153
Qy 1167 ggtgtaagctggtcatttagtcaggcgattcagcttgagtttgagtcacagagatttg 1226
Db 1154 ggtgtaagctggtcatttagtcaggcgattcagcttgagtttgagtcacagagatttg 1213
Qy 1227 tggctaacactttagctgattttagcttcgattgcttgagcttagaccagtgagattg 1286
Db 1214 tggctaacactttagctgattttagcttcgattgcttgagcttagaccagtgagattg 1273
Qy 1287 aatcgttgcggttaactctgttttcagagcttcacaagcttgggacgacctggtgcga 1346
Db 1274 aatcgttgcggttaactctgttttcagagcttcacaagcttgggacgacctggtgcga 1333
Qy 1347 tgcataaggttcttgggtggtggaatcagattaaacccgagagattttcactgtggttgagc 1406
Db 1334 tgcataaggttcttgggtggtggaatcagattaaacccgagagattttcactgtggttgagc 1393
Qy 1407 aggaatcgaaacataatgctcgatttcttagatcgggttactgagtcggtgcatatt 1466
Db 1394 aggaatcgaaacataatgctcgatttcttagatcgggttactgagtcggtgcatatt 1453
Qy 1467 actcgcagctgtttgactcgttgaaggtgtaccgagtggtcaagacaagtcgatcg 1526
Db 1454 actcgcagctgtttgactcgttgaaggtgtaccgagtggtcaagacaagtcgatcg 1513
Qy 1527 aggtttacttgggttaaacagactcgaacgttgttgcttgtgagacctgaccgagttg 1586
Db 1514 aggtttacttgggttaaacagactcgaacgttgttgcttgtgagacctgaccgagttg 1573
Qy 1587 agcgtcatgaacgttgagtcagtgagggaacccggttcgggtcgtcgtggtttcggtcg 1646
Db 1574 agcgtcatgaacgttgagtcagtgagggaacccggttcgggtcgtcgtggtttcggtcg 1633
Qy 1647 cacatattggttcgaatcggttttaagcaagcagatagcttttggctgtgttcacacggcg 1706
Db 1634 cacatattggttcgaatcggttttaagcaagcagatagcttttggctgtgttcacacggcg 1693
Qy 1707 gtgaggggttatcgggttgagagagtgacgctgtctcatgttgggttggtggcacacagac 1766
Db 1694 gtgaggggttatcgggttgagagagtgacgctgtctcatgttgggttggtggcacacagac 1753

Qy 1767 cgcctatagcacctcggcttggaacactctccaccaattagatggtggtcgaatg 1826
Db 1754 cgcctatagcacctcggcttggaacactctccaccaattagatggtggtcgaatg 1813
Qy 1827 atctgttgaacgggttatgatgatagatttcgcgacgcgaagccaaactaaactcactgtt 1886
Db 1814 atctgttgaacgggttatgatgatagatttcgcgacgcgaagccaaactaaactcactgtt 1873
Qy 1887 ttccctttgcaactgttgaagatcttcttcaattatttagtgaattgaaaaatttc 1946
Db 1874 ttccctttgcaactgttgaagatcttcttcaattatttagtgaattgaaaaatttc 1933
Qy 1947 taaattactcacact 1961
Db 1934 aatctcgctaaatt 1948
RESULT 3
AAD05791
ID AAD05791 standard; cDNA; 1951 BP.
XX
AC AAD05791;
XX
DT 31-JUL-2001 (first entry)
XX
DE Arabidopsis thaliana transcription factor, G308 cDNA.
XX
KW Transcription factor; biochemical characteristic; controlling element;
KW structural characteristic; developmental characteristic; gene therapy;
KW agricultural biotechnology; plant trait modification; ss.
XX
OS Arabidopsis thaliana.
XX
FH Key Location/Qualifiers
FT CDS 196..1794
FT /*tag= a
FT /product= "Transcription factor, G308"
XX
WO200136597-Al.
XX
XX 25-MAY-2001.
XX
XX 14-NOV-2000; 2000WO-US31344.
XX
XX 17-NOV-1999; 99US-0166228.
XX 17-APR-2000; 2000US-0197899.
XX 22-AUG-2000; 2000US-0227439.
XX
XX (MEND-) MENDEL BIOTECHNOLOGY INC.
PA (CREE/) CREELMAN R.
PA (YUGG/) YU G.
PA (ADAM/) ADAM L.
PA (RIEC/) RIECHMANN J L.
PA (HEAR/) HEARD J.
PA (SAMA/) SAMAHA R.
PA (PILG/) PILGRIM M.
PA (PINE/) PINEDA O.
PA (JIAN/) JIANG C.
XX
XX Creelman R, Yu G, Adam L, Riechmann JL, Heard J, Samaha R;
PI Pilgrim M, Pineda O, Jiang C;
XX
XX WPI; 2001-335999/35.
DR P-PSDB; AAE01907.
XX
XX Nucleic acids encoding plant transcription factor polypeptides, useful
PT for altering the biochemical characteristics of plants e.g. corn,
PT potato and cotton plants -
XX
XX Claim 4; Page 112-113; 127pp; English.
XX
XX The present sequence is Arabidopsis thaliana transcription factor, G308

| | | | | | | |
|----------|--|--|------|----|--------------|---------------|
| Db | 970 | gcgcttcgaacctgggtgcctcctctgttttcccggttaacccggaattggtccacccggcaaccg | 1029 | PR | 25-MAR-1999; | 99US-0126264. |
| Qy | 1139 | gataatttcgattatcttcatgaagtgggtgtaagctggctcctcatttagctgagcgatt | 1198 | PR | 29-MAR-1999; | 99US-0126785. |
| Db | 1030 | gataatttcgattatcttcatgaagtgggtgtaagctggctcctcatttagctgagcgatt | 1089 | PR | 01-APR-1999; | 99US-0127462. |
| Qy | 1199 | cacgttgagtttgagtacagagatttggtgctaaccactttagctgacttgatgcttcg | 1258 | PR | 06-APR-1999; | 99US-0128234. |
| Db | 1090 | cacgttgagtttgagtacagagatttggtgctaaccactttagctgacttgatgcttcg | 1149 | PR | 08-APR-1999; | 99US-0128714. |
| Qy | 1259 | atgcttgaagcttagacccaagttagatgaatctgttcggttaactctgttttcgaagctt | 1318 | PR | 16-APR-1999; | 99US-0129845. |
| Db | 1150 | atgcttgaagcttagacccaagttagatgaatctgttcggttaactctgttttcgaagctt | 1209 | PR | 19-APR-1999; | 99US-0130077. |
| Qy | 1319 | cacaagctcttgagacacctggtgcgataaggttcttgggtggtgaatcacgatt | 1378 | PR | 21-APR-1999; | 99US-0130449. |
| Db | 1210 | cacaagctcttgagacacctggtgcgataaggttcttgggtggtgaatcacgatt | 1269 | PR | 23-APR-1999; | 99US-0130510. |
| Qy | 1379 | aaaccggagattttcaactgtggtgagcaggaatcgaaaccataatagtcgattttctta | 1438 | PR | 28-APR-1999; | 99US-0130891. |
| Db | 1270 | aaaccggagattttcaactgtggtgagcaggaatcgaaaccataatagtcgattttctta | 1329 | PR | 30-APR-1999; | 99US-0131449. |
| Qy | 1439 | gacgggttactgagtcggttgcaatttactcgacgttcttgactcgttggaagtgta | 1498 | PR | 04-MAY-1999; | 99US-0132407. |
| Db | 1330 | gacgggttactgagtcggttgcaatttactcgacgttcttgactcgttggaagtgta | 1389 | PR | 05-MAY-1999; | 99US-0132484. |
| Qy | 1499 | ccgagtggtcaaacagagtcggtgcgaggttacttgggttaaacagatctgcaacgctt | 1558 | PR | 06-MAY-1999; | 99US-0132486. |
| Db | 1390 | ccgagtggtcaaacagagtcggtgcgaggttacttgggttaaacagatctgcaacgctt | 1449 | PR | 07-MAY-1999; | 99US-0132487. |
| Qy | 1559 | gtgcttgtagtgagcctgacagagttgagcgtcatgaacacgttgagtcgagtggaagc | 1618 | PR | 11-MAY-1999; | 99US-0132863. |
| Db | 1450 | gtgcttgtagtgagcctgacagagttgagcgtcatgaacacgttgagtcgagtggaagc | 1509 | PR | 14-MAY-1999; | 99US-0134218. |
| Qy | 1619 | cggttcgggtcgtcggttcgcgtgcacatatgttcggaatcggttgaagcaagcg | 1678 | PR | 14-MAY-1999; | 99US-0134219. |
| Db | 1510 | cggttcgggtcgtcggttcgcgtgcacatatgttcggaatcggttgaagcaagcg | 1569 | PR | 14-MAY-1999; | 99US-0134221. |
| Qy | 1679 | agtatcgttttgctctgttccaacggcggtgaggggttatcggttgaggagagtgacggc | 1738 | PR | 14-MAY-1999; | 99US-0134370. |
| Db | 1570 | agtatcgttttgctctgttccaacggcggtgaggggttatcggttgaggagagtgacggc | 1629 | PR | 18-MAY-1999; | 99US-0134768. |
| Qy | 1739 | tgctcatgttggg | 1752 | PR | 19-MAY-1999; | 99US-0134941. |
| Db | 1630 | tgctcatgttggg | 1643 | PR | 20-MAY-1999; | 99US-0135124. |
| RESULT 5 | | | | | | 99US-0135629. |
| AAC45745 | | | | | | 99US-0136021. |
| ID | AAC45745 standard; DNA; 1602 BP. | | | | | 99US-0136392. |
| XX | AAC45745; | | | | | 99US-0136782. |
| AC | AAC45745; | | | | | 99US-0137222. |
| CC | AAC45745; | | | | | 99US-0137528. |
| TT | 18-OCT-2000 (first entry) | | | | | 99US-0137502. |
| DE | Arabidopsis thaliana DNA fragment SEQ ID NO: 47609. | | | | | 99US-0137724. |
| XX | Hybridisation assay; genetic mapping; gene expression control; | | | | | 99US-0138094. |
| KW | protein identification; signal transduction pathway; | | | | | 99US-0138540. |
| KW | metabolic pathway; promoter; termination sequence; ss. | | | | | 99US-0138847. |
| XX | Arabidopsis thaliana. | | | | | 99US-0139119. |
| XX | EP1033405-A2. | | | | | 99US-0139452. |
| PN | 06-SEP-2000. | | | | | 99US-0139453. |
| PD | 25-FEB-2000; 2000EP-0301439. | | | | | 99US-0139456. |
| PP | 25-FEB-1999; 99US-0121825. | | | | | 99US-0139457. |
| XX | 05-MAR-1999; 99US-0123180. | | | | | 99US-0139458. |
| PR | 09-MAR-1999; 99US-0123548. | | | | | 99US-0139459. |
| PR | 23-MAR-1999; 99US-0125788. | | | | | 99US-0139460. |
| PR | | | | | | 99US-0139461. |
| PR | | | | | | 99US-0139462. |
| PR | | | | | | 99US-0139463. |
| PR | | | | | | 99US-0139464. |
| PR | | | | | | 99US-0139465. |
| PR | | | | | | 99US-0139466. |
| PR | | | | | | 99US-0139467. |
| PR | | | | | | 99US-0139468. |
| PR | | | | | | 99US-0139469. |
| PR | | | | | | 99US-0139470. |
| PR | | | | | | 99US-0139471. |
| PR | | | | | | 99US-0139472. |
| PR | | | | | | 99US-0139473. |
| PR | | | | | | 99US-0139474. |
| PR | | | | | | 99US-0139475. |
| PR | | | | | | 99US-0139476. |
| PR | | | | | | 99US-0139477. |
| PR | | | | | | 99US-0139478. |
| PR | | | | | | 99US-0139479. |
| PR | | | | | | 99US-0139480. |
| PR | | | | | | 99US-0139481. |
| PR | | | | | | 99US-0139482. |
| PR | | | | | | 99US-0139483. |
| PR | | | | | | 99US-0139484. |
| PR | | | | | | 99US-0139485. |
| PR | | | | | | 99US-0139486. |
| PR | | | | | | 99US-0139487. |
| PR | | | | | | 99US-0139488. |
| PR | | | | | | 99US-0139489. |
| PR | | | | | | 99US-0139490. |
| PR | | | | | | 99US-0139491. |
| PR | | | | | | 99US-0139492. |
| PR | | | | | | 99US-0139493. |
| PR | | | | | | 99US-0139494. |
| PR | | | | | | 99US-0139495. |
| PR | | | | | | 99US-0139496. |
| PR | | | | | | 99US-0139497. |
| PR | | | | | | 99US-0139498. |
| PR | | | | | | 99US-0139499. |
| PR | | | | | | 99US-0139500. |
| PR | | | | | | 99US-0139501. |
| PR | | | | | | 99US-0139502. |
| PR | | | | | | 99US-0139503. |
| PR | | | | | | 99US-0139504. |
| PR | | | | | | 99US-0139505. |
| PR | | | | | | 99US-0139506. |
| PR | | | | | | 99US-0139507. |
| PR | | | | | | 99US-0139508. |
| PR | | | | | | 99US-0139509. |
| PR | | | | | | 99US-0139510. |
| PR | | | | | | 99US-0139511. |
| PR | | | | | | 99US-0139512. |
| PR | | | | | | 99US-0139513. |
| PR | | | | | | 99US-0139514. |
| PR | | | | | | 99US-0139515. |
| PR | | | | | | 99US-0139516. |
| PR | | | | | | 99US-0139517. |
| PR | | | | | | 99US-0139518. |
| PR | | | | | | 99US-0139519. |
| PR | | | | | | 99US-0139520. |
| PR | | | | | | 99US-0139521. |
| PR | | | | | | 99US-0139522. |
| PR | | | | | | 99US-0139523. |
| PR | | | | | | 99US-0139524. |
| PR | | | | | | 99US-0139525. |
| PR | | | | | | 99US-0139526. |
| PR | | | | | | 99US-0139527. |
| PR | | | | | | 99US-0139528. |
| PR | | | | | | 99US-0139529. |
| PR | | | | | | 99US-0139530. |
| PR | | | | | | 99US-0139531. |
| PR | | | | | | 99US-0139532. |
| PR | | | | | | 99US-0139533. |
| PR | | | | | | 99US-0139534. |
| PR | | | | | | 99US-0139535. |
| PR | | | | | | 99US-0139536. |
| PR | | | | | | 99US-0139537. |
| PR | | | | | | 99US-0139538. |
| PR | | | | | | 99US-0139539. |
| PR | | | | | | 99US-0139540. |
| PR | | | | | | 99US-0139541. |
| PR | | | | | | 99US-0139542. |
| PR | | | | | | 99US-0139543. |
| PR | | | | | | 99US-0139544. |
| PR | | | | | | 99US-0139545. |
| PR | | | | | | 99US-0139546. |
| PR | | | | | | 99US-0139547. |
| PR | | | | | | 99US-0139548. |
| PR | | | | | | 99US-0139549. |
| PR | | | | | | 99US-0139550. |
| PR | | | | | | 99US-0139551. |
| PR | | | | | | 99US-0139552. |
| PR | | | | | | 99US-0139553. |
| PR | | | | | | 99US-0139554. |
| PR | | | | | | 99US-0139555. |
| PR | | | | | | 99US-0139556. |
| PR | | | | | | 99US-0139557. |
| PR | | | | | | 99US-0139558. |
| PR | | | | | | 99US-0139559. |
| PR | | | | | | 99US-0139560. |
| PR | | | | | | 99US-0139561. |
| PR | | | | | | 99US-0139562. |
| PR | | | | | | 99US-0139563. |
| PR | | | | | | 99US-0139564. |
| PR | | | | | | 99US-0139565. |
| PR | | | | | | 99US-0139566. |
| PR | | | | | | 99US-0139567. |
| PR | | | | | | 99US-0139568. |
| PR | | | | | | 99US-0139569. |
| PR | | | | | | 99US-0139570. |
| PR | | | | | | 99US-0139571. |
| PR | | | | | | 99US-0139572. |
| PR | | | | | | 99US-0139573. |
| PR | | | | | | 99US-0139574. |
| PR | | | | | | 99US-0139575. |
| PR | | | | | | 99US-0139576. |
| PR | | | | | | 99US-0139577. |
| PR | | | | | | 99US-0139578. |
| PR | | | | | | 99US-0139579. |
| PR | | | | | | 99US-0139580. |
| PR | | | | | | 99US-0139581. |
| PR | | | | | | 99US-0139582. |
| PR | | | | | | 99US-0139583. |
| PR | | | | | | 99US-0139584. |
| PR | | | | | | 99US-0139585. |
| PR | | | | | | 99US-0139586. |
| PR | | | | | | 99US-0139587. |
| PR | | | | | | 99US-0139588. |
| PR | | | | | | 99US-0139589. |
| PR | | | | | | 99US-0139590. |
| PR | | | | | | 99US-0139591. |
| PR | | | | | | 99US-0139592. |
| PR | | | | | | 99US-0139593. |
| PR | | | | | | 99US-0139594. |
| PR | | | | | | 99US-0139595. |
| PR | | | | | | 99US-0139596. |
| PR | | | | | | 99US-0139597. |
| PR | | | | | | 99US-0139598. |
| PR | | | | | | 99US-0139599. |
| PR | | | | | | 99US-0139600. |
| PR | | | | | | 99US-0139601. |
| PR | | | | | | 99US-0139602. |
| PR | | | | | | 99US-0139603. |
| PR | | | | | | 99US-0139604. |
| PR | | | | | | 99US-0139605. |
| PR | | | | | | 99US-0139606. |
| PR | | | | | | 99US-0139607. |
| PR | | | | | | 99US-0139608. |
| PR | | | | | | 99US-0139609. |
| PR | | | | | | 99US-0139610. |
| PR | | | | | | 99US-0139611. |
| PR | | | | | | 99US-0139612. |
| PR | | | | | | 99US-0139613. |
| PR | | | | | | 99US-0139614. |
| PR | | | | | | 99US-0139615. |
| PR | | | | | | 99US-0139616. |
| PR | | | | | | 99US-0139617. |
| PR | | | | | | 99US-0139618. |
| PR | | | | | | 99US-0139619. |
| PR | | | | | | 99US-0139620. |
| PR | | | | | | 99US-0139621. |
| PR | | | | | | 99US-0139622. |
| PR | | | | | | 99US-0139623. |
| PR | | | | | | 99US-0139624. |
| PR | | | | | | 99US-0139625. |
| PR | | | | | | 99US-0139626. |
| PR | | | | | | 99US-0139627. |
| PR | | | | | | 99US-0139628. |
| PR | | | | | | 99US-0139629. |
| PR | | | | | | 99US-0139630. |
| PR | | | | | | 99US-0139631. |
| PR | | | | | | 99US-0139632. |
| PR | | | | | | 99US-0139633. |
| PR | | | | | | 99US-0139634. |
| PR | | | | | | 99US-0139635. |
| PR | | | | | | 99US-0139636. |
| PR | | | | | | 99US-0139637. |
| PR | | | | | | 99US-0139638. |
| PR | | | | | | 99US-0139639. |
| PR | | | | | | 99US-0139640. |
| PR | | | | | | 99US-0139641. |
| PR | | | | | | 99US-0139642. |
| PR | | | | | | 99US-0139643. |
| PR | | | | | | 99US-0139644. |
| PR | | | | | | 99US-0139645. |
| PR | | | | | | 99US-0139646. |
| PR | | | | | | 99US-0139647. |
| PR | | | | | | 99US-0139648. |
| PR | | | | | | 99US-0139649. |
| PR | | | | | | 99US-0139650. |
| PR | | | | | | 99US-0139651. |
| PR | | | | | | 99US-0139652. |
| PR | | | | | | 99US-0139653. |
| PR | | | | | | 99US-0139654. |
| PR | | | | | | 99US-0139655. |
| PR | | | | | | 99US-0139656. |
| PR | | | | | | 99US-0139657. |
| PR | | | | | | 99US-0139658. |
| PR | | | | | | 99US-0139659. |
| PR | | | | | | 99US-0139660. |
| PR | | | | | | 99US-0139661. |
| PR | | | | | | 99US-0139662. |
| PR | | | | | | 99US-0139663. |
| PR | | | | | | 99US-0139664. |
| PR | | | | | | 99US-0139665. |
| PR | | | | | | 99US-0139666. |
| PR | | | | | | 99US-0139667. |
| PR | | | | | | 99US-0139668. |
| PR | | | | | | 99US-0139669. |
| PR | | | | | | 99US-0139670. |
| PR | | | | | | 99US-0139671. |
| PR | | | | | | 99US-0139672. |
| PR | | | | | | 99US-0139673. |
| PR | | | | | | 99US-0139674. |
| PR | | | | | | 99US-0139675. |
| PR | | | | | | 99US-0139676. |
| PR | | | | | | 99US-0139677. |
| PR | | | | | | 99US-0139678. |
| PR | | | | | | 99US-0139679. |
| PR | | | | | | 99US-0139680. |
| PR | | | | | | 99US-0139681. |
| PR | | | | | | 99US-0139682. |
| PR | | | | | | 99US-0139683. |
| PR | | | | | | 99US-0139684. |
| PR | | | | | | 99US-0139685. |
| PR | | | | | | 99US-0139686. |
| PR | | | | | | 99US-0139687. |
| PR | | | | | | 99US-0139688. |
| PR | | | | | | 99US-0139689. |
| PR | | | | | | 99US-0139690. |
| PR | | | | | | 99US-0139691. |
| PR | | | | | | 99US-0139692. |
| PR | | | | | | 99US-0139693. |
| PR | | | | | | 99US-0139694. |
| PR | | | | | | 99US-0139695. |
| PR | | | | | | 99US-0139696. |
| PR | | | | | | 99US-0139697. |
| PR | | | | | | 99US-0139698. |
| PR | | | | | | 99US-0139699. |
| PR | | | | | | 99US-0139700. |
| PR | | | | | | 99US-0139701. |
| PR | | | | | | 99US-0139702. |
| PR | | | | | | 99US-0139703. |
| PR | | | | | | 99US-0139704. |
| PR | | | | | | 99US-0139705. |
| PR | | | | | | 99US-0139706. |
| PR | | | | | | 99US-0139707. |
| PR | | | | | | 99US-0139708. |
| PR | | | | | | 99US-0139709. |
| PR | | | | | | 99US-0139710. |
| PR | | | | | | 99US-0139711. |
| PR | | | | | | 99US-0139712. |
| PR | | | | | | 99US-0139713. |
| PR | | | | | | 99US-0139714. |
| PR | | | | | | 99US-0139715. |
| PR | | | | | | 99US-0139716. |
| PR | | | | | | 99US-0139717. |
| PR | | | | | | 99US-0139718. |
| PR | | | | | | 99US-0139719. |
| PR | | | | | | 99US-0139720. |
| PR | | | | | | 99US-0139721. |
| PR | | | | | | 99US-0139722. |
| PR | | | | | | 99US-0139723. |
| PR | | | | | | 99US-0139724. |
| PR | | | | | | 99US-0139725. |
| PR | | | | | | 99US-0139726. |
| PR | | | | | | 99US-0139727. |
| PR | | | | | | 99US-0139728. |
| PR | | | | | | 99US-0139729. |
| PR | | | | | | 99US-0139730. |
| PR | | | | | | 99US-0139731. |
| PR | | | | | | 99US-0139732. |
| PR | | | | | | 99US-0139733. |
| PR | | | | | | 99US-0139734. |
| PR | | | | | | 99US-0139735. |
| PR | | | | | | 99US-0139736. |
| PR | | | | | | 99US-0139737. |
| PR | | | | | | 99US-0139738. |
| PR | | | | | | 99US-0139739. |
| PR | | | | | | 99US-0139740. |
| PR | | | | | | 99US-0139 |

| | | |
|---|--------------|---|
| PR | 16-JUL-1999; | 99US-0144086. |
| PR | 19-JUL-1999; | 99US-0144325. |
| PR | 19-JUL-1999; | 99US-0144331. |
| PR | 19-JUL-1999; | 99US-0144332. |
| PR | 19-JUL-1999; | 99US-0144333. |
| PR | 19-JUL-1999; | 99US-0144334. |
| PR | 19-JUL-1999; | 99US-0144335. |
| PR | 20-JUL-1999; | 99US-0144352. |
| PR | 20-JUL-1999; | 99US-0144632. |
| PR | 20-JUL-1999; | 99US-0144884. |
| PR | 21-JUL-1999; | 99US-0144814. |
| PR | 21-JUL-1999; | 99US-0145086. |
| PR | 21-JUL-1999; | 99US-0145088. |
| PR | 22-JUL-1999; | 99US-0145085. |
| PR | 22-JUL-1999; | 99US-0145087. |
| PR | 22-JUL-1999; | 99US-0145089. |
| PR | 22-JUL-1999; | 99US-0145192. |
| PR | 23-JUL-1999; | 99US-0145145. |
| PR | 23-JUL-1999; | 99US-0145218. |
| PR | 23-JUL-1999; | 99US-0145224. |
| PR | 26-JUL-1999; | 99US-0145276. |
| PR | 27-JUL-1999; | 99US-0145913. |
| PR | 27-JUL-1999; | 99US-0145918. |
| PR | 27-JUL-1999; | 99US-0145919. |
| PR | 28-JUL-1999; | 99US-0145931. |
| PR | 02-AUG-1999; | 99US-0146386. |
| PR | 02-AUG-1999; | 99US-0146388. |
| PR | 02-AUG-1999; | 99US-0146389. |
| PR | 03-AUG-1999; | 99US-0147038. |
| PR | 04-AUG-1999; | 99US-0147204. |
| PR | 04-AUG-1999; | 99US-0147302. |
| PR | 05-AUG-1999; | 99US-0147192. |
| PR | 05-AUG-1999; | 99US-0147260. |
| PR | 06-AUG-1999; | 99US-0147303. |
| PR | 06-AUG-1999; | 99US-0147416. |
| PR | 09-AUG-1999; | 99US-0147493. |
| PR | 09-AUG-1999; | 99US-0147935. |
| PR | 10-AUG-1999; | 99US-0148171. |
| PR | 11-AUG-1999; | 99US-0148319. |
| PR | 12-AUG-1999; | 99US-0148341. |
| PR | 13-AUG-1999; | 99US-0148565. |
| PR | 13-AUG-1999; | 99US-0148684. |
| PR | 16-AUG-1999; | 99US-0149368. |
| PR | 17-AUG-1999; | 99US-0149175. |
| PR | 18-AUG-1999; | 99US-0149426. |
| PR | 20-AUG-1999; | 99US-0149722. |
| PR | 20-AUG-1999; | 99US-0149723. |
| PR | 20-AUG-1999; | 99US-0149929. |
| PR | 23-AUG-1999; | 99US-0149902. |
| PR | 23-AUG-1999; | 99US-0149930. |
| PR | 25-AUG-1999; | 99US-0150566. |
| PR | 26-AUG-1999; | 99US-0150884. |
| PR | 27-AUG-1999; | 99US-0151065. |
| PR | 27-AUG-1999; | 99US-0151066. |
| PR | 27-AUG-1999; | 99US-0151080. |
| PR | 30-AUG-1999; | 99US-0151303. |
| PR | 31-AUG-1999; | 99US-0151438. |
| PR | 01-SEP-1999; | 99US-0151930. |
| PR | 07-SEP-1999; | 99US-0152363. |
| PR | 10-SEP-1999; | 99US-0153070. |
| PR | 13-SEP-1999; | 99US-0153758. |
| PR | 15-SEP-1999; | 99US-0154018. |
| PR | 16-SEP-1999; | 99US-0154039. |
| PR | 20-SEP-1999; | 99US-0154779. |
| PR | 22-SEP-1999; | 99US-0155139. |
| PR | 23-SEP-1999; | 99US-0155486. |
| PR | 24-SEP-1999; | 99US-0155659. |
| PR | 28-SEP-1999; | 99US-0156458. |
| PR | 29-SEP-1999; | 99US-0156596. |
| PR | 04-OCT-1999; | 99US-0157117. |
| PR | 05-OCT-1999; | 99US-0157753. |
| PR | 06-OCT-1999; | 99US-0157865. |
| PR | 07-OCT-1999; | 99US-0158029. |
| PR | 08-OCT-1999; | 99US-0158232. |
| PR | 12-OCT-1999; | 99US-0158369. |
| PR | 13-OCT-1999; | 99US-0159293. |
| PR | 13-OCT-1999; | 99US-0159294. |
| PR | 13-OCT-1999; | 99US-0159295. |
| PR | 14-OCT-1999; | 99US-0159329. |
| PR | 14-OCT-1999; | 99US-0159330. |
| PR | 14-OCT-1999; | 99US-0159331. |
| PR | 14-OCT-1999; | 99US-0159637. |
| PR | 14-OCT-1999; | 99US-0159638. |
| PR | 18-OCT-1999; | 99US-0159584. |
| PR | 21-OCT-1999; | 99US-0160741. |
| PR | 21-OCT-1999; | 99US-0160767. |
| PR | 21-OCT-1999; | 99US-0160768. |
| PR | 21-OCT-1999; | 99US-0160770. |
| PR | 21-OCT-1999; | 99US-0160814. |
| PR | 21-OCT-1999; | 99US-0160815. |
| PR | 22-OCT-1999; | 99US-0160980. |
| PR | 22-OCT-1999; | 99US-0160981. |
| PR | 22-OCT-1999; | 99US-0160989. |
| PR | 25-OCT-1999; | 99US-0161404. |
| PR | 25-OCT-1999; | 99US-0161405. |
| PR | 25-OCT-1999; | 99US-0161406. |
| PR | 26-OCT-1999; | 99US-0161359. |
| PR | 26-OCT-1999; | 99US-0161360. |
| PR | 26-OCT-1999; | 99US-0161361. |
| PR | 28-OCT-1999; | 99US-0161920. |
| PR | 28-OCT-1999; | 99US-0161992. |
| PR | 28-OCT-1999; | 99US-0161993. |
| PR | 29-OCT-1999; | 99US-0162142. |
| Query Match 80.4%; Score 1579.4; DB 21; Length 1602; | | |
| Best Local Similarity 99.6%; Pred. No. 0; | | |
| Matches 1583; Conservative 0; Mismatches 6; Indels 0; Gaps 0; | | |
| Qy | 219 | atcatcatcatcatcaagaataagaagactatgatgaataatgaagaacacacgcta 278 |
| Db | 14 | atcatcatcatcatcaagaataagaagactatgatgaataatgaagaacacacgcta 73 |
| Qy | 279 | acggcatggatgagcttcttagctgttcttgggtacaaaggttaggtcatcgaaatggctg 338 |
| Db | 74 | acggcatggatgagcttcttagctgttcttgggtacaaaggttaggtcatcgaaatggctg 133 |
| Qy | 339 | atgtgtcagaactcgagcagcttgaagttagtctaaatgttcaagaacacgatac 398 |
| Db | 134 | atgtgtcagaactcgagcagcttgaagttagtctaaatgttcaagaacacgatac 193 |
| Qy | 399 | ttctcaactcgctactgagactgttcaactataatccggcggagctttacacgtggctg 458 |
| Db | 194 | ttctcaactcgctactgagactgttcaactataatccggcggagctttacacgtggctg 253 |
| Qy | 459 | attctatgctcacgcagacttaactctcgtctgcttaacgcgcgagtagcatctaaagcta 518 |
| Db | 254 | attctatgctcacgcagacttaactctcgtctgcttaacgcgcgagtagcatctaaagcta 313 |
| Qy | 519 | ttcccggtgacgcgattctcaatcagttcgctatcgattcggtcttctcgtaaccaag 578 |
| Db | 314 | ttcccggtgacgcgattctcaatcagttcgctatcgattcggtcttctcgtaaccaag 373 |
| Qy | 579 | gcggcggaggagatcacgtataactacaacacgcggttgaaatgctcaacgcgctg 638 |
| Db | 374 | gcggcggaggagatcacgtataactacaacacgcggttgaaatgctcaacgcgctg 433 |
| Qy | 639 | aaaccaccacgacgcgctgagtcactcggcatgttctgctggttgaactcgcagagata 698 |
| Db | 434 | aaaccactacgcgacgcgctgagtcactcggcatgttctgctggttgaactcgcagagata 493 |
| Qy | 699 | acgggtgctctcgttcaacgcgcttttggcttcgctgaagctgttcagaagagagatac 758 |
| Db | 494 | acgggtgctctcgttcaacgcgcttttggcttcgctgaagctgttcagaagagagatac 553 |
| Qy | 759 | tgactgtggcgaagctctggtgaagcaaatcggatcttagctgttctcaaatcgag 818 |

THIS PAGE BLANK (USPTO)